## Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

## Listing of Claims:

1-21. (Cancelled).

22. (Previously Presented)     A method of communicating charging information for a particular mobile station in a network including at least a serving node and a gateway node, comprising the following steps:

receiving, at said gateway node, a data packet comprising a header and a payload;

identifying a particular Packet Data Protocol (PDP) context for a particular mobile station;

gathering, at said gateway node and from said received data packet, charging information relating to said PDP context;

creating an GPRS Tunnelling Protocol (GTP) packet data unit, said GTP packet data unit including a header, a payload, and a pre-determined service class extension header; and

transmitting, from said gateway node to said serving node, said GTP packet data unit containing said charging information;

wherein said charging information relates to said PDP context for said mobile station, said pre-determined service class extension header is reserved for service class information pertaining to at least one IP packet payload for said PDP context and said header comprises a next extension header type indicating that said pre-determined service class extension header follows.

23. (Previously Presented)     The method according to claim 22, wherein said network includes a charging node associated with said serving node, the method further comprising the following steps after said transmitting step:

receiving, at said serving node, said charging information; and

sending, from said serving node to said charging node, information corresponding to said charging information.

24.     (Previously Presented)          The method according to claim 22, wherein said gathering step further comprises the following steps:

performing a packet inspection of said received data packet; and

assigning a predefined service class for said data packet based on said packet inspection.

25.     (Previously Presented)          The method according to claim 23, wherein said charging node comprises a CAMEL SCP node and said charging information is signaled by means of the CAP protocol.

26.     (Previously Presented)          The method according to claim 22, wherein said network comprises a GPRS network, said serving node comprises a Serving GPRS Support Node, and said gateway node comprises a Gateway GPRS Support Node.

27-34. (Cancelled)

35.     (Currently Amended)          A gateway node for communicating within a system performing packet inspection and service classification, said system including a packet data network and a serving node, wherein IP data packets may be communicated for identification of a given predetermined service class out of a plurality of predetermined service classes within said system, said gateway node comprising:

means for receiving, at said gateway node, an IP data packet from said packet data network;

means for extracting the payload of said IP data packet;

means for determining a value, out of a plurality of values corresponding to a plurality of different service classes, said determined value corresponding to a service class for said payload;

means for assigning said determined service class to a service class extension header;

means for creating a packet data ~~packet~~ unit by including said service class extension header;

means for inserting said payload in said packet data ~~packet~~ unit; and

means for transmitting said packet data unit from said gateway node to said serving node.


36.    (Currently Amended)    A serving node for communicating with a charging node, said serving node comprising:

means for receiving a packet data unit comprising a service class extension header;

means for determining a service class value from said service class extension header;

means for determining a volume count, for a given service class and a given PDP context, from said service class extension header;

means for storing said volume count;

means for transmitting ~~the~~ a payload data associated with said PDP context; and

means for sending associated values of said determined service class value and said volume count from said serving node to said charging node.


37.    (Previously Presented)    A serving node for communicating with a charging node, said serving node comprising:

means for receiving a packet data unit comprising a service class extension header;

means for extracting a service class value and a volume count from said service class extension header,

means for storing said volume count from said service class extension header, said volume count relating to a given service class and a given PDP context,

means for transmitting payload data associated with said PDP context; and

means for sending associated values of said service class and said volume count from said serving node to said charging node.

38.    (Previously Presented)        The serving node according to claim 37, wherein said volume count is associated with an accumulated volume count pertaining to a given PDP context.

39.    (Currently Amended)      The serving node according to claim 37, wherein said charging node is a CAMEL node and the procedures used by at least one of said means for ~~communicating with~~ sending to said CAMEL node is following CAMEL reporting procedures.

40.    (Currently Amended)        The serving node according to claim 38 ~~claim 39~~, wherein said accumulated volume is accumulated from classified and/or incompletely classified payload volumes, said accumulated volume count is being maintained as long as said PDP context is active.

41.    (Previously Presented)        A gateway node for communicating within a system performing packet inspection and service classification, said system comprising a packet data network and a serving node, wherein IP data packets comprising payload data may be communicated for identification of a given predetermined service class out of a plurality of predetermined service classes within said system, said gateway node comprising:

means for receiving, from a packet data network, an IP data packet in a continuous downstream of IP data packets associated with a given PDP context;

means for receiving a service class identification for said IP data packet;

means for determining whether said IP data packet is incompletely classified;

means for storing an aggregated volume count associated with incompletely classified payload data associated with said PDP context;

means for storing information associated with incompletely classified IP data packets for said PDP context;

means for identifying a service class for the payload data of said IP data packet, said payload data being associated with said PDP context;

means for storing an aggregated volume count for incompletely classified payload data associated with said PDP context;

means for assigning said identified service class to a service class extension header;

means for assigning an aggregated volume count for previously incompletely classified payload data of said PDP context to said service class extension header,

means for inserting said service class extension header and said payload data in a packet data unit; and

means for transmitting said packet data unit to said serving node.


42.    (Currently Amended)    A gateway node for communicating within a system performing packet inspection and service classification, said system comprising a packet data network and a serving node, wherein IP data packets comprising payload data may be communicated for identification of a given predetermined service class out of a plurality of predetermined service classes within said system, said gateway node comprising:

means for receiving IP data packets in a continuous upstream of IP data packets associated with a given PDP context;

means for determining the service class of the payload data of said IP data packets associated with said PDP context;

means for storing an accumulated uplink volume count associated with said service class;

~~means for determining the service class of the payload data of said IP data packets associated with said PDP context;~~

means for storing an accumulated downlink volume count associated with said service class;

means for generating service class extension headers ~~containing said service class~~ for ~~the~~ upstream payload, said headers containing said service class and said accumulated uplink volume count;

means for generating service class extension headers ~~containing said service class~~ for ~~the~~ downstream payload, said headers containing said service class and said accumulated downlink volume count;

means for inserting said extension headers <u>for said downstream payload</u> in packet data ~~packet~~ units;

means for inserting said payload data in packet data ~~packet~~ units; and

means for transmitting said packet data units to said serving node.

\* \* \*